**Nikon’s Universe Scale Guiding Questions:**

**Directions:** Navigate to this link: <http://www.nikon.com/about/feelnikon/universcale/index.htm> -read the intro then enter the simulation in full screen mode. As you explore the simulation, answer the following questions.

1. How large does NASA say the universe is? How old does NASA say the universe is? Explain how the age and size of the universe can be the same number?

2. What is the local group?

3. Sketch the shape of our galaxy and indicate where our solar system is within the Milky Way.

4. What object lies about 1500 light years from our Sun?

5. Is it reasonable to express the diameter of our solar system in km? Why/why not? How else could we express this distance?

5.5 Would it make sense to express your height in miles? Explain.

6. Compare the size of the Sun with the size of Earth.

7. What is very unique about Uranus’s orientation in space?

8. What makes Venus difficult to study from its surface?

9. Which planet’s day is longer than its year? (Recall how we determine the length of one day and one year.)

10. Many people believe that the Great Pyramids are the largest manmade structures on Earth, is this true? Explain.

11. What biological wonder is nearly the size of the statue of liberty?

12. Would a Tyrannosaurus Rex fit within the Triumphal Arch in France? Would the Triumphal Arch fit inside the great pyramid?

13. What unit is regarded as the limit of the naked eye?

14. What is the smallest man-made device listed in the simulation? What does this thing do?

15. Why is it helpful to have an understanding of scale, or to have a tool like Nikon’s “Universescale” when trying to answer questions about the sizes of things in the universe?

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